Listing of the Claims:

A clean listing of the entire set of pending claims, including amendments to the claims, is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application. No claims are amended in this Response.

1. (Previously Presented) In a decorrelator, a method of synthesizing a first and a second output signal from an input signal, the method comprising:

applying the input signal to a filter of the decorrelator to generate a filtered signal;

obtaining from an analysis circuit of the decorrelator a correlation parameter indicative of a desired correlation between the first and second output signals;

obtaining from the analysis circuit of the decorrelator a level parameter indicative of a desired level difference between the first and second output signals; and

applying the input signal and the filtered signal to a transformation circuit of the decorrelator and performing by a matrixing operation on the input signal and the filtered signal to transform the input signal and the filtered signal into the first and second output signals, where the matrixing operation employs the correlation parameter and the level parameter.

2. (Original) A method according to claim 1, wherein the matrixing operation comprises a common rotation by a predetermined angle of the first and second output signals in a space spanned by the input signal and the filtered input signal; and where the predetermined angle depends on the level parameter.

3. (Original) A method according to claim 2, wherein the predetermined angle is selected to maximize a total contribution of the input signal to the first and second output signals.

4. (Original) A method according to claim 1, further comprising scaling each of the first and second output signals to said desired level difference between the first and second output signals.

5. (Original) A method according to claim 1, wherein the filtering of the input signal comprises all-pass filtering the input signal.

6. (Original) A method according to claim 5, wherein the all-pass filter comprises a frequency-dependant delay.

7. (Previously Presented) A device for synthesizing a first and a second output signal from an input signal, the arrangement comprising:

a filter for filtering the input signal to generate a filtered signal;

an analyzer for obtaining a correlation parameter indicative of a desired correlation between the first and second output signals, and for obtaining a level parameter indicative of a desired level difference between the first and second output signals;

a transformation circuit for transforming the input signal and the filtered signal by a matrixing operation into the first and second output signals, where the matrixing operation depends on the correlation parameter and the level parameter.

8. (Previously Presented) The device of claim 7, further comprising

an input unit for receiving an encoded audio signal;

a decoder for decoding the encoded audio signal to produce the input signal.

9-10. (Canceled)

11. (Previously Presented) The method of claim 1, wherein applying the input signal to the filter to generate the filtered signal comprises applying the input signal to an all-pass filter.

12. (Previously Presented) The method of claim 11, wherein applying the input signal to the all-pass filter to generate the filtered signal comprises applying the input signal to the all-pass filter wherein the all-pass filter provides a frequency-dependent delay element wherein the delay at a frequency *Y* is less than a delay at a frequency *X*, when *Y* > *X*.

13. (Previously Presented) The method of claim 11, wherein applying the input signal to the all-pass filter to generate the filtered signal comprises applying the input signal to the all-pass filter comprising one period of a Schroeder-phase complex.

14. (Previously Presented) The method of claim 1, wherein the matrixing operation on the input signal and the filtered signal comprises multiplying the input signal and the filtered signal by:

$$\begin{pmatrix} \frac{c}{1+c} & 0 \\ 0 & \frac{1}{1+c} \end{pmatrix} \bullet \begin{pmatrix} \cos(\beta+\alpha/2) & \sin(\beta+\alpha/2) \\ \cos(\beta-\alpha/2) & \sin(\beta-\alpha/2) \end{pmatrix},$$

where the first output signal is *L*, and the second output signal is *R*,

where $c = |L - R|$,

where α is an angular difference between *L* and *R*, and

where $\beta = \tan^{-1}\left[\left(\frac{1-c}{1+c}\right) \bullet \tan(\alpha/2)\right]$

15. (Previously Presented) The device of claim 7, wherein the filter means

comprises an all-pass filter.

16. (Previously Presented) The device of claim 15, wherein the all-pass filter provides a frequency-dependent delay element wherein the delay at a frequency *Y* is less than a delay at a frequency *X*, when *Y* > *X*.

17. (Previously Presented) The device of claim 15, wherein the all-pass filter comprises one period of a Schroeder-phase complex.

18. (Previously Presented) The device of claim 7, wherein the means for obtaining the correlation parameter and the means for obtaining the level parameter comprise an analysis circuit that receives a set of spatial parameters pertaining to the input signal including at least: (1) an interaural level difference (ILD) parameter; (2) at least one of an interaural time difference (ITD) parameter and an interaural phase difference (IPD) parameter; and (3) a maximum value of a cross-correlation function parameter, and extracts from the set of spatial parameters the correlation parameter and the level parameter.

19. (Previously Presented) The device of claim 7, wherein the transformation circuit is adapted to perform the matrixing operation on the input signal and the filtered signal by multiplying the input signal and the filtered signal by:

$$\begin{pmatrix} \frac{c}{1+c} & 0 \\ 0 & \frac{1}{1+c} \end{pmatrix} \bullet \begin{pmatrix} \cos(\beta+\alpha/2) & \sin(\beta+\alpha/2) \\ \cos(\beta-\alpha/2) & \sin(\beta-\alpha/2) \end{pmatrix},$$

where the first output signal is *L*, and the second output signal is *R*,

where $c = |L - R|$,

where α is an angular difference between *L* and *R*, and

where $\beta = \tan^{-1}\left[\left(\frac{1-c}{1+c}\right) \bullet \tan(\alpha/2)\right]$

20. (Previously Presented) In a data processing system, a method of synthesizing a first and a second output signal from an input signal, the method comprising:

employing processing means of the data processing system to filter the input signal to generate a filtered signal;

employing the processing means to obtain a correlation parameter indicative of a desired correlation between the first and second output signals, and to obtain a level parameter indicative of a desired level difference between the first and second output signals; and

employing the processing means to perform a matrixing operation on the input signal and the filtered signal to transform the input signal and the filtered signal into the first and second output signals, where the matrixing operation employs the correlation parameter and the level parameter.

21. (Previously Presented) The method of claim 20, wherein filtering the input signal to generate the filtered signal comprises performing an all-pass filter operation.

22. (Previously Presented) The method of claim 20, wherein the processing mean performs the matrixing operation on the input signal and the filtered signal by multiplying the input signal and the filtered signal by:

$$\begin{pmatrix} \frac{c}{1+c} & 0 \\ 0 & \frac{1}{1+c} \end{pmatrix} \bullet \begin{pmatrix} \cos(\beta+\alpha/2) & \sin(\beta+\alpha/2) \\ \cos(\beta-\alpha/2) & \sin(\beta-\alpha/2) \end{pmatrix},$$

where the first output signal is *L*, and the second output signal is *R*,

where $c = |L - R|$,

where α is an angular difference between *L* and *R*, and

where $\beta = \tan^{-1}\left[\left(\frac{1-c}{1+c}\right) \bullet \tan(\alpha/2)\right]$